


b) defining at least one patch of conserved amino acid residues being coherently connected over at least 400 \AA^2 of the surface of the three-dimensional structure of the naturally occurring allergen molecule as defined by having a solvent accessibility of at least 20%, said at least one patch comprising at least one B cell epitope; and

c) substituting at least one amino acid residue in said at least one patch with another amino acid which is not conserved, wherein the α -carbon backbone tertiary structure of the allergen molecule is essentially preserved.

3. (Twice Amended) A recombinant allergen according to claim 48, wherein the specific IgE binding to the mutant allergen is reduced by at least 5%, preferably at least 10%.

4. (Twice Amended) A recombinant allergen according to claim 48, wherein the average root mean square deviation of the atomic coordinates comparing the α -carbon backbone tertiary structures of the mutant and the naturally occurring allergen molecules is below 2 \AA .

 5. (Twice Amended) A recombinant allergen according to claim 2, wherein said at least one patch comprises atoms of 15-25 amino acid residues.

6. (Twice Amended) A recombinant allergen according to claim 2, wherein the amino acid residues of said at least one patch are ranked with respect to solvent accessibility, and one or more amino acids among the more solvent accessible ones are substituted.

7. (Amended) A recombinant allergen according to claim 6, wherein one or more amino acid residues of said at least one patch having a solvent accessibility of 20-80% are substituted.

8. (Twice Amended) A recombinant allergen according to claim 2, wherein 1-5 amino acid residues per 400 \AA^2 in said at least one patch are substituted.

9. (Twice Amended) A recombinant allergen according to claim 2, wherein the substitution

of one or more amino acid residues in said B cell epitope or said at least one patch is carried out by site-directed mutagenesis.

10. (Twice Amended) A recombinant allergen according claim 48, wherein the allergen is derived from an inhalation allergen.

11. (Amended) A recombinant allergen according to claim 10, wherein the allergen is derived from a pollen allergen.

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12. (Amended) A recombinant allergen according to claim 10, wherein the allergen is derived from a pollen allergen originating from the taxonomic order of *Fagales*, *Oleales* or *Pinales*.

13. (Amended) A recombinant allergen according to claim 12, wherein the allergen is derived from *Bet v 1*.

14. (Amended) A recombinant allergen according to claim 13, wherein at least one amino acid residue of said B cell epitope or said at least one patch is substituted.

16. (Amended) A recombinant allergen according to claim 11, wherein the allergen is derived from a pollen allergen originating from the taxonomic order of *Poales*.

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17. (Amended) A recombinant allergen according to claim 11, wherein the allergen is derived from a pollen allergen originating from the taxonomic order of *Asterales* or *Urticales*.

18. (Amended) A recombinant allergen according to claim 10, wherein the allergen is derived from a house dust mite allergen.

19. (Amended) A recombinant allergen according to claim 18, wherein the allergen is derived from a mite allergen originating from *Dermatophagoides*.

20. (Amended) A recombinant allergen according to claim 10, wherein the allergen is derived from a cockroach allergen.

21. (Amended) A recombinant allergen according to claim 10, wherein the allergen is derived from an animal allergen.

22. (Amended) A recombinant allergen according to claim 21, wherein the allergen is derived from an animal allergen originating from a cat, dog or horse.

23. (Twice Amended) A recombinant allergen according to claim 48, wherein the allergen is derived from a venom allergen.

24. (Amended) A recombinant allergen according to claim 23 wherein the allergen is derived from a venom allergen originating from the taxonomic order of *Hymenoptera*.

25. (Amended) A recombinant allergen according to claim 24 wherein the allergen is derived from a venom allergen from the taxonomic order of Vespidae, Apidae and Formicoidae.

26. (Twice Amended) A recombinant allergen according to claim 23, wherein the allergen is derived from *Ves v 5*.

27. (Twice Amended) A recombinant allergen according to claim 23, wherein at least one amino acid is substituted.

28. (Twice Amended) A recombinant allergen according to claim 25, wherein the substitution is Lys72A1a or Tyr96A1a.

32. (Twice Amended) A recombinant allergen according to claim 48 for use as a pharmaceutical.

33. (Twice Amended) A pharmaceutical composition, comprising a recombinant allergen according to claim 48, optionally in combination with a pharmaceutically acceptable carrier and/or excipient, and optionally an adjuvant.

34. (Amended) A pharmaceutical composition according to claim 33, in the form of a vaccine against allergic reactions elicited by a naturally occurring allergen in patients suffering from allergy.

47. (Amended) A pharmaceutical composition obtainable by the process according to claim 33.

48. (New) A recombinant mutant allergen derived from a naturally occurring allergen in which at least one surface-exposed, amino acid residue of a B cell epitope at a position which is conserved in the amino acid sequences of homologous proteins within the taxonomic order from which the naturally occurring allergen originates, is substituted with an amino acid residue which is not conserved in the same position in the amino acid sequences of homologous proteins within the taxonomic order from which the naturally occurring allergen originates, wherein the recombinant mutant allergen has an α -carbon backbone tertiary structure essentially the same as the α -carbon backbone tertiary of the naturally occurring allergen, and specific IgE binding to the mutant allergen is reduced compared to the IgE binding to the naturally occurring allergen.--

-- 49. (New) A recombinant allergen according to claim 48, wherein the average root mean square deviation of the atomic coordinates comparing the α -carbon backbone tertiary structures of the mutant and the naturally occurring allergen molecules is below 2Å. --

-- 50. (New) A recombinant allergen according to claim 14 wherein said allergen has an amino acid substitution selected from the group consisting of Thr substituted at position 10 of SEQ ID NO: 37 with Pro, Asp substituted at position 25 of SEQ ID NO: 37 with Gly, (Asn substituted at position 28 of SEQ ID NO: 37 with Thr, Lys substituted at position 32 of SEQ ID NO: 37 with Gln), Glu substituted at position 45 of SEQ ID NO: 37 with Ser, Asn substituted at position 47 of SEQ ID NO: 37 with Ser, Lys substituted at position 55 of SEQ ID NO: 37 with Asn, Thr substituted at position